

INFORMATION TO OFFERORS OR QUOTERS SECTION A - COVER SHEET	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">1. SOLICITATION NUMBER</td> <td style="width: 40%;">2. (X one)</td> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;">N00173-99-R-KK03</td> <td>a. SEALED BID</td> </tr> <tr> <td><input checked="" type="checkbox"/> b. NEGOTIATED (RFP)</td> </tr> <tr> <td>c. NEGOTIATED (RFQ)</td> </tr> </table>	1. SOLICITATION NUMBER	2. (X one)	N00173-99-R-KK03	a. SEALED BID	<input checked="" type="checkbox"/> b. NEGOTIATED (RFP)	c. NEGOTIATED (RFQ)
1. SOLICITATION NUMBER	2. (X one)						
N00173-99-R-KK03	a. SEALED BID						
	<input checked="" type="checkbox"/> b. NEGOTIATED (RFP)						
	c. NEGOTIATED (RFQ)						

INSTRUCTIONS

NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.

You are cautioned to note the "Certification of Non-Segregated Facilities" in the solicitation. Failure to agree to the certification will render your reply nonresponsive to the terms of solicitations involving awards of contracts exceeding \$25,000 which are not exempt from the provisions of the Equal Opportunity clause.

"Fill-ins" are provided on the face and reverse of Standard Form 18 and Parts I and IV of Standard Form 33, or other solicitation documents and Sections of Table of Contents in this solicitation and should be examined for applicability.

See the provision of this solicitation entitled either "Late Bids, Modifications of Bids or Withdrawal of Bids" or "Late Proposals, Modifications of Proposals and Withdrawals of Proposals."

When submitting your reply, the envelope used must be plainly marked with the Solicitation Number, as shown above and the date and local time set forth for bid opening or receipt of proposals in the solicitation document.

If NO RESPONSE is to be submitted, detach this sheet from the solicitation, complete the information requested on reverse, fold, affix postage, and mail. NO ENVELOPE IS NECESSARY.

Replies must set forth full, accurate, and complete information as required by this solicitation (including attachments). The penalty for making false statements is prescribed in 18 U.S.C. 1001.

3. ISSUING OFFICE (Complete mailing address, including ZIP Code) CONTRACTING OFFICER NAVAL RESEARCH LABORATORY ATTN: CODE 3220.KK WASHINGTON DC 20375-5326							
4. ITEMS TO BE PURCHASED (Brief description) RESEARCH SUPPORT FOR ELECTRONIC DEVICES AND MATERIALS							
5. PROCUREMENT INFORMATION (X and complete as applicable) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 95%;">a. THIS PROCUREMENT IS UNRESTRICTED</td> </tr> <tr> <td style="width: 5%;"></td> <td style="width: 95%;">b. THIS PROCUREMENT IS A _____ % SET-ASIDE FOR ONE OF THE FOLLOWING (X one). (See Section I of the Table of Contents in this solicitation for details of the set-aside.)</td> </tr> <tr> <td style="width: 33%; text-align: center;"><input type="checkbox"/> (1) Small Business</td> <td style="width: 33%; text-align: center;"><input type="checkbox"/> (2) Labor Surplus Area Concerns</td> <td style="width: 33%; text-align: center;"><input type="checkbox"/> (3) Combined Small Business/Labor Area Concerns</td> </tr> </table>	<input checked="" type="checkbox"/>	a. THIS PROCUREMENT IS UNRESTRICTED		b. THIS PROCUREMENT IS A _____ % SET-ASIDE FOR ONE OF THE FOLLOWING (X one). (See Section I of the Table of Contents in this solicitation for details of the set-aside.)	<input type="checkbox"/> (1) Small Business	<input type="checkbox"/> (2) Labor Surplus Area Concerns	<input type="checkbox"/> (3) Combined Small Business/Labor Area Concerns
<input checked="" type="checkbox"/>	a. THIS PROCUREMENT IS UNRESTRICTED						
	b. THIS PROCUREMENT IS A _____ % SET-ASIDE FOR ONE OF THE FOLLOWING (X one). (See Section I of the Table of Contents in this solicitation for details of the set-aside.)						
<input type="checkbox"/> (1) Small Business	<input type="checkbox"/> (2) Labor Surplus Area Concerns	<input type="checkbox"/> (3) Combined Small Business/Labor Area Concerns					
6. ADDITIONAL INFORMATION The Naval Research Laboratory Contracting Division issues solicitations and amendments to solicitations electronically via the Internet at the following website: http://heron.nrl.navy.mil/contracts/home.htm . Any amendments to this solicitation will be posted at that website. Amendments will not be distributed by any other means. It is the responsibility of potential offerors to periodically review the website for amendments to this solicitation.							
7. POINT OF CONTACT FOR INFORMATION <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> a. NAME (Last, First, Middle Initial) King, Kevin, M </td> <td style="width: 50%; padding: 5px;"> b. ADDRESS (Include Zip Code) Naval Research Lab. 4555 Overlook Ave., S.W. Washington DC 20375-5320 </td> </tr> <tr> <td style="padding: 5px;"> c. TELEPHONE NUMBER (Include Area Code and Extension) (NO COLLECT CALLS) (202) 767-1495 </td> <td></td> </tr> </table>	a. NAME (Last, First, Middle Initial) King, Kevin, M	b. ADDRESS (Include Zip Code) Naval Research Lab. 4555 Overlook Ave., S.W. Washington DC 20375-5320	c. TELEPHONE NUMBER (Include Area Code and Extension) (NO COLLECT CALLS) (202) 767-1495				
a. NAME (Last, First, Middle Initial) King, Kevin, M	b. ADDRESS (Include Zip Code) Naval Research Lab. 4555 Overlook Ave., S.W. Washington DC 20375-5320						
c. TELEPHONE NUMBER (Include Area Code and Extension) (NO COLLECT CALLS) (202) 767-1495							

8. REASONS FOR NO RESPONSE (<i>X all that apply</i>)			
a. CANNOT COMPLY WITH SPECIFICATIONS		b. CANNOT MEET DELIVERY REQUIREMENT	
c. UNABLE TO IDENTIFY THE ITEM(S)		d. DO NOT REGULARLY MANUFACTURE OR SELL THE TYPE OF ITEMS INVOLVED	
e. OTHER (<i>Specify</i>)			
9. MAILING LIST INFORMATION (<i>X one</i>)			
YES	NO	WE DESIRE TO BE RETAINED ON THE MAILING LIST FOR FUTURE PROCUREMENT OF THE TYPE OF TIME(S) INVOLVED.	
10. RESPONDING FIRM			
a. COMPANY NAME		b. ADDRESS (<i>Include Zip Code</i>)	
c. ACTION OFFICER			
(1) Typed or Printed Name (<i>Last, First, Middle Initial</i>)	(2) Title	(3) Signature	(4) Date Signed (<i>YYMMDD</i>)

DD FORM 1707 REVERSE, MAR 90

FOLD

FOLD

FOLD

FOLD

FROM

AFFIX
STAMP
HERE

SOLICITATION NUMBER	
N00173-99-R-KK03	
DATE (<i>YYMMDD</i>)	LOCAL TIME
19 AUG 99	4:00 P.M.

TO

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING	PAGE OF <div style="display: flex; justify-content: space-between;"><div>1</div><div>35</div><div>PAGES</div></div>
2. CONTRACT NO.	3. SOLICITATION NO. <div style="text-align: center;">N00173-99-R-KK03</div>	4. TYPE OF SOLICITATION <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> SEALED BID (IFB)</div><div><input checked="" type="checkbox"/> NEGOTIATED (RFP)</div></div>		5. DATE ISSUED <div style="text-align: center;">19 JUL 99</div>	6. REQUISITION/PURCHASE NO.
7. ISSUED BY CONTRACTING OFFICER NAVAL RESEARCH LABORATORY ATTN: CODE WASHINGTON DC 20375-5326		8. ADDRESS OFFER TO (If other than Item 7)			

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 2 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Building 222, Room 115 until 1600 local time 19 AUG 99
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME <div style="text-align: center;">Kevin M. King</div>	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) <div style="text-align: center;">(202) 767-1495</div>
---------------------------	---	--

11. TABLE OF CONTENTS

(✓)	SEC.	DESCRIPTION	PAGE(S)	(✓)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
<input checked="" type="checkbox"/>	A	SOLICITATION/CONTRACT FORM	1	<input checked="" type="checkbox"/>	I	CONTRACT CLAUSES	13
<input checked="" type="checkbox"/>	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
<input checked="" type="checkbox"/>	C	DESCRIPTION/SPECS./WORK STATEMENT	3	<input checked="" type="checkbox"/>	J	LIST OF ATTACHMENTS	20
<input checked="" type="checkbox"/>	D	PACKAGING AND MARKING	3	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
<input checked="" type="checkbox"/>	E	INSPECTION AND ACCEPTANCE	3		K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	21
<input checked="" type="checkbox"/>	F	DELIVERIES OR PERFORMANCE	4		L	INSTRS., CONDS., AND NOTICES TO OFFERORS	22
<input checked="" type="checkbox"/>	G	CONTRACT ADMINISTRATION DATA	5		M	EVALUATION FACTORS FOR AWARD	34
<input checked="" type="checkbox"/>	H	SPECIAL CONTRACT REQUIREMENTS	10				

OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS	20 CALENDAR DAYS	30 CALENDAR DAYS	CALENDAR DAYS
	%	%	%	%
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
15B. TELEPHONE NO. (Include area code)			15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.
17. SIGNATURE			18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> 10 U.S.C. 2304(c) ()</div><div><input type="checkbox"/> 41 U.S.C. 253(c) ()</div></div>		23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)
24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY
26. NAME OF CONTRACTING OFFICER (Type or print)		27. UNITED STATES OF AMERICA <div style="text-align: center;">(Signature of Contracting Officer)</div>
		28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

**PART I - THE SCHEDULE
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

B-1 SUPPLIES/SERVICES AND COSTS

ITEM NUMBER	SUPPLIES/SERVICES	MAXIMUM ESTIMATED COST	MAXIMUM FIXED FEE	MAXIMUM ESTIMATED COST PLUS FIXED FEE
0001	The Contractor shall provide research support for electronic devices and materials in accordance with the Statement of Work, Attachment No. 1.	\$	\$	\$
0002	Data in accordance with Exhibit A (DD 1423) and Enclosure (1)	* NSP	* NSP	* NSP
TOTAL EST. COST PLUS FIXED FEE		\$	\$	\$

- Not Separately Priced

B-2 MINIMUM AND MAXIMUM QUANTITIES

As contemplated by the clause of the solicitation entitled, "Indefinite Quantity", the minimum quantity that will be ordered by the Government during the effective period of the contract is research and development support requiring the contractor to provide a level of effort of 62,300 direct labor hours.

The maximum quantity that the Government may order during the effective period of the contract is research and development support requiring the contractor to provide a level of effort of 206,800 direct labor hours.

The minimum and maximum quantities may consist of any combination of the tasks contained in the statement of work.

SECTION C
DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

C-1 STATEMENT OF WORK

The work and services to be performed hereunder shall be subject to the requirements and standards contained in Attachment (1), Statement of Work, with Exhibit A, Contract Data Requirements List, and all other Attachments cited in Section J, which are incorporated by reference into Section C.

C-2 REQUIREMENTS FOR ON-SITE CONTRACTORS

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the Requirements for On-Site Contractors dated 02 February 1998 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/home.htm>.

C-3 The specific work to be carried out shall be further described in task orders issued under this contract.

SECTION D
PACKAGING AND MARKING

D-1 PACKAGING AND MARKING

Preservation, packaging, packing and marking of all deliverable contract line items must conform to normal commercial packing standards to assure safe delivery at destination.

SECTION E
INSPECTION AND ACCEPTANCE

E-1 INSPECTION AND ACCEPTANCE CLAUSES INCORPORATED BY REFERENCE:**FAR CLAUSE TITLE**

52.246-9 - Inspection Of Research And Development (Short Form) (APR 1984)

DFARS CLAUSE TITLE

252.246-7000 - Material Inspection And Receiving Report (DEC 1991)

E-2 INSPECTION AND ACCEPTANCE

Inspection and acceptance of the final delivery will be accomplished by the Technical Manager (TM) or Contracting Officer Representative (COR) designated in Section G of this contract . Inspection and acceptance will be performed at the Naval Research Laboratory, Washington DC 20375-5320.

SECTION F
DELIVERIES OR PERFORMANCE

F-1 DELIVERIES OR PERFORMANCE CLAUSES INCORPORATED BY REFERENCE:**FAR CLAUSE TITLE**

52.242-15 - Stop-Work Order (AUG 1989) - Alternate I (APR 1984)
52.247-34 - F.O.B. Destination (NOV 1991)

F-2 DELIVERIES OR PERFORMANCE

(a) The effective period of this contract during which delivery orders/task orders may be issued is from date of contract award through five years thereafter.

(b) Each delivery order/task order shall specify the period of performance.

(c) All deliverables required by Contract Line Item No. (CLIN) 0002 under each order shall be shipped FOB Destination, Naval Research Laboratory, Washington DC 20375-5320, consigned to:

Contracting Officer's Representative

*

Naval Research Laboratory

Contract Number : *

Delivery Order Number: _____

Building: *

Code: *

4555 Overlook Avenue, SW

Washington DC 20375-5320

(d) Each delivery order/task order shall specify the place of performance.

(* To be filled in at time of award)

SECTION G
CONTRACT ADMINISTRATION DATA

G-1 PROCURING OFFICE REPRESENTATIVE

In order to expedite administration of the contract, the Administrative Contracting Officer (ACO) will direct inquiries to the appropriate office listed below. Please do not direct routine inquiries to the person listed in Item 20A on Standard Form 26.

Contract Matters- *

Security Matters- *

Safety Matters- *

Patent Matters- *

Release of Data- *

The ACO will forward invention disclosures and reports directly to the Associate Counsel for Patents, Code 3008.2, Naval Research Laboratory, Washington DC 20375-5320. The Associate Counsel for Patents will return the reports along with a recommendation to the Administrative Contracting Officer. The Associate Counsel for Patents will represent the Contracting Officer with regard to invention reporting matters arising under this contract.

(* To be filled in at time of award)

G-2 CONTRACTING OFFICER'S REPRESENTATIVE (COR) - FUNCTIONS AND LIMITATIONS

* is hereby designated the cognizant COR who will represent the Contracting Officer in the administration of technical details within the scope of this contract and inspection and acceptance. The COR is not otherwise authorized to make any representations or commitments of any kind on behalf of the Contracting Officer or the Government. The COR does not have the authority to alter the Contractor's obligations or change the specifications in the contract. If, as a result of technical discussions, it is desirable to alter contract obligations or statements of work, a modification must be issued in writing and signed by the Contracting Officer. The COR is responsible for reviewing the bills and charges submitted by the Contractor and informing the ACO of areas where exceptions are to be taken.

(* To be filled in at time of award)

G-3 TECHNICAL DIRECTION MEMORANDUM (TDM)

- (a) For the purposes of this clause, technical direction includes the following:
 - (1) Direction to the Contractor which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise describes work which will accomplish the objectives described in the statement of work;
 - (2) Guidelines to the Contractor which assist in interpretation of drawings, specifications or technical portions of work description.
- (b) Technical instructions must be within the scope of work stated in the contract. Technical instructions may not be used to:
 - (1) Assign additional work under the contract;
 - (2) Direct a change as defined in the contract clause entitled "Changes";
 - (3) Increase or decrease the estimated contract cost, the fixed fee, or the time required for contract performance; or
 - (4) Change any of the terms, conditions or specifications of the contract
- (c) The TDM shall be written by the Contracting Officer's Representative (COR), with the original given to the Contractor and a copy retained in the CORs file. Technical direction may be issued orally only in emergency situations. If technical direction is issued orally, a TDM must follow within two (2) working days from the date of the oral direction. Amendments, corrections, or changes to TDMs shall also be in written format and shall include all the information set forth in e. Below.
- (d) A TDM shall be considered issued when the Government deposits it in the mail, or if transmitted by other means, when it is physically delivered to the contractor.
- (e) TDMs shall include, but not be limited to, the following information:
 - (1) Date of TDM,
 - (2) Contract Number,
 - (3) Reference to the relevant portion or item in the Statement of Work,
 - (4) The specific technical direction or clarification, and
 - (5) The signature of the COR.
- (f) CORs shall retain all files containing TDMs for a period of two (2) years after the final contract completion date.
- (g) The only individual authorized in any way to amend or modify any of the terms of this contract shall be the Contracting Officer. When, in the opinion of the Contractor, any technical direction calls for effort outside the scope of the contract or inconsistent with this special provision, the Contractor shall notify the Contracting Officer in writing within ten (10) working days after its receipt.

G-4 SUBCONTRACTORS/CONSULTANTS

(a) Advance notification or requests for consent pursuant to the contract clause entitled "Subcontracts" (FAR 52.244-2) shall be directed to the cognizant administrative contracting officer (ACO).

(b) The following subcontractors/consultants have been identified in the Contractor's proposal as necessary for performance of this contract:

Subcontractor/Consultant Name

Estimated Cost

(Paragraph (b) will be included and filled in at time of award if subcontractor/consultants are proposed by the successful offeror)

G-5 NAPS 5252.232-9001 - SUBMISSION OF INVOICES (COST-REIMBURSEMENT, TIME-AND-MATERIALS, LABOR-HOUR, OR FIXED PRICE INCENTIVE (JUL 1992))

(a) "Invoice" as used in this clause includes contractor requests for interim payments using public vouchers (SF 1034) but does not include contractor requests for progress payments under fixed price incentive contracts.

(b) The Contractor shall submit invoices and any necessary supporting documentation, in an original and 4 copies, to the contract auditor at the following address:

(To be filled in at time of award)

unless delivery orders are applicable, in which case invoices will be segregated by individual order and submitted to the address specified in the order. In addition, an information copy shall be submitted to [See Section G for designated COR]. Following verification, the contract auditor will forward the invoice to the designated payment office for payment in the amount determined to be owing, in accordance with the applicable payment (and fee) clause(s) of this contract.

(c) Invoices requesting interim payments shall be submitted no more than once every two weeks, unless another time period is specified in the Payments clause of this contract. For indefinite delivery type contracts, interim payment invoices shall be submitted no more than once every two weeks for each delivery orders. There shall be a lapse of no more than 30 calendar days between performance and submission of an interim payment invoice.

(d) In addition to the information identified in the Prompt Payment clause herein, each invoice shall contain the following information, as applicable:

- (1) Contract line item number (CLIN)
- (2) Subline item number (SLIN)
- (3) Accounting Classification Reference Number(ACRN)
- (4) Payment terms
- (5) Procuring activity
- (6) Date supplies provided or services performed
- (7) Costs incurred and allowable under the contract
- (8) Vessel (e.g., ship, submarine or other craft) or system for which supply/service is provided

(e) A DD Form 250, "Material Inspection and Receiving Report",

 ^{**} is required with each invoice submittal.

 X is required only with the final invoice.

 ^{**} is not required.

(f) A Certificate of Performance

 ** shall be provided with each invoice submittal.

 X is not required.

(g) The Contractor's final invoice shall be identified as such, and shall list all other invoices (if any) previously tendered under this contract.

(h) Cost of performance shall be segregated, accumulated and invoiced to the appropriate ACRN categories to the extent possible. When such segregation of costs by ACRN is not possible for invoices submitted with CLIN/SLINS with more than one ACRN, an allocation ratio shall be established in the same ratio as the obligations cited in the accounting data so that costs are allocated on a proportional basis.

G-6 INCREMENTAL FUNDING

Orders issued under this contract may be incrementally funded. Incrementally funded orders will contain a provision substantially as follows:

This order is incrementally funded pursuant to the Limitation of Funds clause, FAR 52.232-22. Funds are allotted to the order in the amount of \$ * and it is estimated that they are sufficient for performance through *.

(* To be filled in at time of award)

G-7 PAYMENT INSTRUCTIONS FOR MULTIPLE ACCOUNTING CLASSIFICATION CITATIONS (COST-REIMBURSEMENT)

The purpose of these instructions is to permit the paying office to charge the accounting classification citations in the contract in a manner that reflects the performance of the contract. These instructions do not create any obligation on the part of the Government or the contractor nor do they in any way alter any obligation created by any other provision of the contract. Invoices should be paid from available ACRNs in the following order:

(a) ACRNs cited on the contractor's invoice.

(b) On a proportional basis from any ACRNs assigned to funds which will cancel at the end of the current fiscal year.

(c) The ACRN assigned to the following line of accounting:

97X4930.NH4A 000 77777 0 000173 2F 000000 N00173Z45000.

(d) If funds appropriated in more than one fiscal year are allotted to the contract, the ACRN assigned to the oldest allotment of funds.

(e) On a proportional basis from all ACRNs assigned to allotments of funds appropriated in a single fiscal year.

G-8 ACCOUNTING AND APPROPRIATION DATA

Each delivery order/task order will contain the accounting and appropriation data for payment under the contract.

G-9 TASK ORDER PROCEDURES FOR INDEFINITE QUANTITY CONTRACTS

The following procedure shall be followed when placing task orders under this contract:

- (a) Only properly appointed Contracting Officers employed at the Naval Research Laboratory (NRL) shall issue task orders under this contract.
- (b) A DD Form 1155 will be issued for each task order. The DD Form 1155, "Order for Supplies or Services", shall constitute the instrument for the placement of requirements under this contract.
- (c) Each task order shall be subject to FAR 52.232-20 Limitation of Cost or FAR 52.232-22 Limitation of Funds clause, as appropriate. Each task order is subject to the terms and conditions of the clause in Section H entitled, "Level of Effort Task Orders".
- (d) Prior to the issuance of a task order, the contractor will be provided with the statement of work and shall promptly submit a cost proposal for performing the work. The fixed fee shall be in the same proportion to the estimated cost for each task order as the maximum fixed fee is to the maximum estimated cost for the contract as set forth in Section B.
- (e) Task orders issued shall include, but not be limited to, the following information:
 - (1) Date of Order
 - (2) Contract Number and Task Order Number
 - (3) Accounting and Appropriation Data
 - (4) Description of the Work to be Performed
 - (5) Level of Effort
 - (6) DD Form 1423 (Contract Data Requirements List)
 - (7) Place of Performance
 - (8) Period of Performance
 - (9) Estimated Cost Plus Fixed Fee
 - (10) DD Form 254 (Contract Security Classification Specifications)
 - (11) List of Government furnished material and the estimated value thereof for each order.
- (f) The ceiling amount for each task order will be the ceiling price stated therein and may not be exceeded except when authorized by a modification to the task order.

**SECTION H
SPECIAL CONTRACT REQUIREMENTS**

H-1 TYPE OF CONTRACT

(To be filled in at time of award)

H-2 ONR 5252.237-9705 - KEY PERSONNEL (DEC 88)

(a) The Contractor agrees to assign to the contract tasks those persons whose resumes were submitted with its proposal and who are necessary to fulfill the requirements of the contract as "key personnel". No substitutions may be made except in accordance with this clause.

(b) The Contractor understands that during the first ninety (90) days of the contract performance period, no personnel substitutions will be permitted unless these substitutions are unavoidable because of the incumbent's sudden illness, death or termination of employment. In any of these events, the Contractor shall promptly notify the Contracting Officer and provide the information described in paragraph (c) below. After the initial ninety (90) day period the Contractor must submit to the Contracting Officer all proposed substitutions, in writing, at least fifteen (15) days in advance (thirty (30) days if security clearance must be obtained) of any proposed substitution and provide the information required by paragraph (c) below.

(c) Any request for substitution must include a detailed explanation of the circumstances necessitating the proposed substitution, a resume for the proposed substitute, and any other information requested by the Contracting Officer. Any proposed substitute must have qualifications equal to or superior to the qualifications of the incumbent. The Contracting Officer or his/her authorized representative will evaluate such requests and promptly notify the Contractor of his/her approval or disapproval thereof.

(d) In the event that any of the identified key personnel cease to perform under the contract and the substitute is disapproved, the contract may be immediately terminated in accordance with the Termination clause of the contract.

The following are identified as key personnel:

(To be filled in at time of award)

H-3 LEVEL OF EFFORT

- (a) In the performance of each term form task order issued under this contract, the Contractor agrees to provide the level of effort specified in the task order and in accordance with this provision.
- (b) It is understood and agreed that the rate of direct labor hours expended each month may fluctuate in pursuit of the technical objective, provided such fluctuation does not result in the use of the total hours of effort prior to the expiration of the term of the task order. The Contractor is required to notify the Contracting Officer when 85% of the total level of effort of the task order has been expended.
- (c) If, during the term of the task order, the Contractor finds it necessary to accelerate the expenditure of direct labor under a task order to such an extent that the total hours of effort specified would be used prior to the expiration of the term, the Contractor shall notify the Contracting Officer in writing setting forth the acceleration required, the probable benefits which would result, and an offer to undertake the acceleration at no increase in the estimated cost or fixed fee together with an offer setting forth a proposed level of effort, cost breakdown, and proposed fixed-fee for continuation of the work until expiration of the term hereof. The offer shall provide that the work proposed will be subject to the terms and conditions of this contract and any additions or changes required by current law, regulations, or directives, and that the offer, with a written notice of acceptance by the Contracting Officer, shall constitute a binding contract. The Contractor shall not accelerate any effort until receipt of such written approval by the Contracting Officer. Any agreement to accelerate will be formalized by contract modification.
- (d) The Contracting Officer may, by written order, direct the Contractor to accelerate the expenditure of direct labor under a task order such that the labor hours of effort specified therein would be used prior to the expiration of the term. This order shall specify the acceleration required and the resulting revised term. The Contractor shall acknowledge this order within ten days of receipt.
- (e) If the total level of effort specified in each task order is not provided by the Contractor during the term of the task order, the Contracting Officer shall either (i) reduce the fixed fee of the task order as follows:

$$\text{Fee Reduction} = \text{Fixed Fee} \times \frac{(\text{Required LOE Hours} - \text{Expended LOE Hours})}{\text{Required LOE Hours}}$$

or (ii) subject to the provisions of the clause of this contract entitled "Limitation of Cost," require the Contractor to continue to perform the work until the total number of hours of direct labor specified in the task order shall have been expended, at no increase in the fixed fee of the task order.

(f) In the event the Government fails to fully fund the task order in a timely manner, the term of the task order may be extended accordingly with no change to cost or fee. If the Government fails to fully fund the task order, the fee will be adjusted in direct proportion to that effort which was performed.

(g) Notwithstanding any of the provisions of the above paragraphs, the Contractor may furnish labor hours up to five percent in excess of the total direct labor hours specified in the task order provided that the additional effort is furnished within the term hereof, and provided further that no increase in the estimated cost or fixed-fee is required, and no adjustment in the fixed-fee shall be made provided that the Contractor has delivered at least 95% of the level of effort specified in the task order.

(h) It is understood that the mix of labor categories provided by the Contractor under the task order, as well as the distribution of effort among those categories, may vary considerably from the initial mix and distribution of effort, which was estimated by the Government or proposed by the Contractor.

(i) Nothing herein shall be construed to alter or waive any of the rights or obligations of either party pursuant to the Clause entitled "Limitation of Costs" or "Limitation of Funds," either of which incorporated herein applies to each task order under this contract.

H-4 ONR 5252.235-9714 - REPORT PREPARATION (FEB 97)

Scientific or technical reports prepared by the Contractor and deliverable under the terms of this contract will be prepared in accordance with format requirements contained in ANSI/NISO Z39.18-1995, "Scientific and Technical Reports: Elements, Organization, and Design. "[NOTE: ANSI Z39.18 may be obtained from NISO Press Fulfillment Center, P. O. Box 338, Oxon Hill, MD. 20750-0338. Telephone 1-800-282-6476]

H-5 ON-SITE USE OF GOVERNMENT PROPERTY

It is anticipated that Government property will be used by the contractor's personnel in the performance of that portion of the contract performed on-site at the U.S. Naval Research Laboratory (NRL) including any of its field sites. Such use will be on a rent free basis and all such property shall be considered to remain in the possession and control of the NRL for property responsibility and accountability purposes.

H-6 YEAR 2000 COMPLIANT INFORMATION TECHNOLOGY

This requirement applies to information technology (IT) that processes date-related information. All such IT delivered under this contract shall be Year 2000 compliant as defined at FAR 39.002.

H-7 REPRESENTATIONS AND CERTIFICATIONS

The Contractor's completed Representations, Certifications, and Other Statements of Offerors or Respondents is incorporated herein by reference in any resultant award.

PART II - CONTRACT CLAUSES
SECTION I
CONTRACT CLAUSES

I-1 52.252-2 - CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

a. FEDERAL ACQUISITION REGULATION CLAUSES

<u>FAR CLAUSE</u>	<u>TITLE</u>
52.202-1	- Definitions (OCT 1995)
52.203-3	- Gratuities (APR 1984)
52.203-5	- Covenant Against Contingent Fees (APR 1984)
52.203-6	- Restrictions On Subcontractor Sales To The Government (JUL 1995)
52.203-7	- Anti-Kickback Procedures (JUL 1995)
52.203-8	- Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (JAN 1997)
52.203-10	- Price Or Fee Adjustment For Illegal Or Improper Activity (JAN 1997)
52.203-12	- Limitation On Payments To Influence Certain Federal Transactions (JUN 1997)
52.204-2	- Security Requirements (AUG 1996)
52.204-4	- Printing/Copying Double-Sided On Recycled Paper (JUN 1996)
52.209-6	- Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment (JUL 1995)
52.211-15	- Defense Priority and Allocation Requirements (SEP 1990)
52.215-2	- Audit And Records-Negotiation (AUG 1996)
52.215-8	- Order of Precedence - Uniform Contract Format (OCT 1997)
52.215-10	- Price Reduction for Defective Cost or Pricing Data (OCT 1997)
52.215-12	- Subcontractor Cost or Pricing Data (OCT 1997)
52.215-14	- Integrity of Unit Prices (OCT 1997)
52.215-15	- Pension Adjustments And Asset Reversions (DEC 1998)
52.215-17	- Waiver of Facilities Capital Cost of Money (OCT 1997) (<i>will be included if the successful offeror does not propose facilities capital cost of money</i>)
52.215-18	- Reversion or Adjustment of Plans for Post-retirement Benefits (PRB) Other than Pensions (OCT 1997)
52.215-19	- Notification of Ownership Changes (OCT 1997)
52.215-21	- Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data -Modifications (OCT 1997)

- 52.216-7 - Allowable Cost And Payment (APR 1998)
- 52.216-8 - Fixed-Fee (MAR 1997)
- 52.219-4 - Notice of Price Evaluation Preference For HUBZone Small Business Concerns (JAN 1999) ☐ Offeror elects to waive the evaluation preference.
- 52.219-8 - Utilization Of Small Business Concerns (JUN 1999)
- 52.219-9 - Small Business Subcontracting Plan (JAN 1999) - Alternate II (JAN 1999)
- 52.219-16 - Liquidated Damages-Subcontracting Plan (JAN 1999)
- 52.219-25 - Small Disadvantaged Business Participation Program – Disadvantaged Status And Reporting (JAN 1999)
- 52.222-1 - Notice To The Government Of Labor Disputes (FEB 1997)
- 52.222-2 - Payment For Overtime Premiums (JUL 1990) -The Use Of Overtime Is Authorized Under This Contract If The Overtime Premium Does Not Exceed "0"
- 52.222-3 - Convict Labor (AUG 1996)
- 52.222-21 - Prohibition of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (FEB 1999)
- 52.222-35 - Affirmative Action For Disabled Veterans And Veterans Of The Vietnam Era (APR 1998)
- 52.222-36 - Affirmative Action For Workers With Disabilities (JUN 1998)
- 52.222-37 - Employment Reports On Disabled Veterans And Veterans Of The Vietnam Era (APR 1998)
- 52.223-2 - Clean Air And Water (APR 1984)
- 52.223-3 - Hazardous Material Identification And Material Safety Data (JAN 1997)
- 52.223-5 - Pollution Prevention and Right-To-Know Information (APR 1998)
- 52.223-6 - Drug-Free Workplace (JAN 1997)
- 52.223-14 - Toxic Chemical Release Reporting (OCT 1996)
- 52.225-11 - Restrictions On Certain Foreign Purchases (AUG 1998)
- 52.226-1 - Utilization Of Indian Organizations And Indian-Owned Economic Enterprises (MAY 1999)
- 52.227-1 - Authorization And Consent (JUL 1995)- Alternate I (APR 1984)
- 52.227-2 - Notice And Assistance Regarding Patent And Copyright Infringement (AUG 1996)
- 52.227-10 - Filing of Patent Application- Classified Subject Matter (APR 1984)
- 52.227-11 - Patent Rights - Retention By The Contractor (Short Form) (JUN 1997)
(will be included if the successful offeror is a small business or a non-profit organization)
- 52.227-12 - Patent Rights - Retention By The Contractor (Long Form) (JAN 1997)
(will be included if the successful offeror is not a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.230-2 - Cost Accounting Standards (APR 1998)
- 52.230-3 - Disclosure And Consistency Of Cost Accounting Practices (APR 1998)
- 52.230-6 - Administration Of Cost Accounting Standards (APR 1996)
- 52.232-9 - Limitation On Withholding Of Payments (APR 1984)
- 52.232-17 - Interest (JUN 1996)
- 52.232-18 - Availability Of Funds (APR 1984)
- 52.232-20 - Limitation Of Cost (APR 1984) (Applicable when the contract or task order is fully funded)

- 52.232-22 - Limitation Of Funds (APR 1984) (Applicable when the contract or task order is not fully funded)
- 52.232-23 - Assignment Of Claims (JAN 1986) Alternate I (APR 1984)
- 52.232-25 - Prompt Payment (JUN 1997)
- 52.233-1 - Disputes (DEC 1998) - Alternate I (DEC 1991)
- 52.233-3 - Protest After Award (AUG 1996) - Alternate I (JUN 1985)
- 52.237-2 - Protection Of Government Buildings, Equipment And Vegetation (APR 1984)
- 52.237-3 - Continuity Of Services (JAN 1991)
- 52.237-10 - Identification of Uncompensated Overtime (OCT 1997)
- 52.242-1 - Notice Of Intent To Disallow Costs (APR 1984)
- 52.242-3 - Penalties For Unallowable Costs (OCT 1995)
- 52.242-4 - Certification of Final Indirect Costs (JAN 1997)
- 52.242-13 - Bankruptcy (JUL 1995)
- 52.243-2 - Changes - Cost-Reimbursement (AUG 1987) - Alternate V (APR 1984)
- 52.243-6 - Change Order Accounting (APR 1984)
- 52.243-7 - Notification Of Changes (APR 1984) fill in 30
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (AUG 1998)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 52.244-6 - Subcontracts for Commercial Items and Commercial Components (OCT 1998)
- 52.245-5 - Government Property (Cost-Reimbursement, Time-And-Material, Or Labor-Hour Contracts) (JAN 1986) (DEVIATION)
- 52.245-9 - Use And Charges (APR 1984) (DEVIATION)
- 52.245-18 - Special Test Equipment (FEB 1993)
- 52.245-19 - Government Property Furnished "As-Is" (APR 1984)
- 52.246-23 - Limitation Of Liability (FEB 1997)
- 52.246-25 - Limitation Of Liability - Services (FEB 1997)
- 52.247-1 - Commercial Bill Of Lading Notations (APR 1984)
- 52.247-63 - Preference For U. S. Flag Carriers (JAN 1997)
- 52.249-6 - Termination (Cost-Reimbursement) (SEP 1996)
- 52.249-14 - Excusable Delays (APR 1984)
- 52.252-6 - Authorized Deviations in Clauses (APR 1984)(fill in Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2))
- 52.253-1 - Computer Generated Forms (JAN 1991)

b. DEPARTMENT OF DEFENSE FEDERAL ACQUISITION REGULATION CLAUSES

DFARS CLAUSE TITLE

- 252.201-7000 - Contracting Officer's Representative (DEC 1991)
- 252.203-7001 - Prohibition On Persons Convicted of Fraud Or Other Defense Contract Related Felonies (MAR 1999)
- 252.203-7002 - Display Of DoD Hotline Poster (DEC 1991)
- 252.204-7000 - Disclosure of Information (DEC 1991)
- 252.204-7003 - Control Of Government Personnel Work Product (APR 1992)
- 252.204-7004 - Required Central Contractor Registration (MAR 1998)
- 252.205-7000 - Provision Of Information To Cooperative Agreement Holders (DEC 1991)

- 252.209-7000 - Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate-Range Nuclear Forces (INF) Treaty (NOV 1995)
- 252.209-7004 - Subcontracting With Firms That Are Owned Or Controlled By The Government Of A Terrorist Country (MAR 1998)
- 252.215-7000 - Pricing Adjustments (DEC 1991)
- 252.215-7002 - Cost Estimating System Requirements (OCT 1998)
- 252.219-7003 - Small Business And Small Disadvantaged Business Subcontracting Plan (DoD Contracts) (APR 1996)
- 252.223-7004 - Drug-Free Work Force (SEP 1988)
- 252.223-7006 - Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)
- 252.225-7001 - Buy American Act And Balance Of Payments Program (MAR 1998)
- 252.225-7002 - Qualifying Country Sources As Subcontractors (DEC 1991)
- 252.225-7009 - Duty Free Entry- Qualifying Country Supplies (End Products and Components) (MAR 1998)
- 252.225-7010 - Duty Free Entry - Additional Provisions (MAR 1998)
- 252.225-7012 - Preference For Certain Domestic Commodities (MAY 1999)
- 252.225-7026 - Reporting Of Contract Performance Outside The United States (MAR 1998)
- 252.225-7031 - Secondary Arab Boycott Of Israel (JUN 1992)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995)
- 252.227-7016 - Rights In Bids or Proposal Information (JUN 1995)
- 252.227-7025 - Limitations On The Use Or Disclosure Of Government-Furnished Information Marked With Restrictive Legends (JUN 1995)
- 252.227-7026 - Deferred Delivery Of Technical Data Or Computer Software (APR 1988)
- 252.227-7027 - Deferred Ordering Of Technical Data Or Computer Software (APR 1988)
- 252.227-7030 - Technical Data--Withholding Of Payment (OCT 1988)
- 252.227-7034 - Patents--Subcontracts (APR 1984)
- 252.227-7036 - Declaration Of Technical Data Conformity (JAN 1997)
- 252.227-7037 - Validation Of Restrictive Markings On Technical Data (NOV 1995)
- 252.227-7039 - Patents--Reporting of Subject Inventions (APR 1990)
- 252.231-7000 - Supplemental Cost Principles (DEC 1991)
- 252.232-7009 - Payment By Electronic Funds Transfer (CCR) (JUN 1998)
- 252.235-7010 - Acknowledgment of Support and Disclaimer (MAY 1995)
- 252.235-7011 - Final Scientific Or Technical Report (MAY 1995)
- 252.242-7000 - Post Award Conference (DEC 1991)
- 252.242-7004 - Material Management And Accounting System (SEP 1996)
- 252.243-7002 - Requests for Equitable Adjustment (MAR 1998)
- 252.245-7001 - Reports of Government Property (MAY 1994)
- 252.247-7023 - Transportation Of Supplies By Sea (NOV 1995)
- 252.247-7024 - Notification Of Transportation Of Supplies By Sea (NOV 1995)
(will be included if the successful offeror made a negative response to the inquiry at DFARS 252.247-7022)

I-2 FAR 52.223-11 - OZONE-DEPLETING SUBSTANCES (JUN 1996)**(a) Definitions.**

"Ozone-depleting substance", as used in this clause, means any substance designated as Class I by the Environmental Protection Agency (EPA) (40 CFR Part 82), including but not limited to chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or any substance designated as Class II by EPA (40 CFR Part 82), including but not limited to hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

"WARNING: Contains (or manufactured with, if applicable) _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere."

* The Contractor shall insert the name of the substance(s).

I-3 DFARS 252.225-7008 - SUPPLIES TO BE ACCORDED DUTY- FREE ENTRY (MAR 1998)

In accordance with paragraph (b) of the Duty-Free Entry clause of this contract, in addition to duty-free entry for all qualifying country supplies (end products and components) and all eligible end products subject to applicable trade agreements (if this contract contains the Buy American Act - Trade Agreements - Balance of Payments Program clause or the Buy American Act - North American Free Trade Agreement Implementation Act - Balance of Payments Program clause), the following foreign end products that are neither qualifying country end products nor eligible end products under a trade agreement, and the following nonqualifying country components, are accorded duty free entry.

I-4 INDEFINITE DELIVERY, INDEFINITE QUANTITY CLAUSES:**FAR 52.216-18 ORDERING (OCT 1995)**

- (a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from date of contract award through five years thereafter.
- (b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.
- (c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

FAR 52.216-19 ORDER LIMITATIONS (OCT 1995)

- (a) *Minimum order.* When the Government requires supplies or services covered by this contract in an amount of less than 30 labor hours, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.
- (b) *Maximum order.* The Contractor is not obligated to honor -
 - (1) Any order for a single item in excess of 206,800 labor hours
 - (2) Any order for a combination of items in excess of 206,800 labor hours; or
 - (3) A series of orders from the same ordering office within 30 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.
- (c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.
- (d) Notwithstanding paragraphs (b) and (c) of this section, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 30 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

FAR 52.216-22 INDEFINITE QUANTITY (OCT 1995)

- (a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.
- (b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum". The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum".
- (c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.
- (d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after 60 days after the end of the contract

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

SECTION J

LIST OF ATTACHMENTS

**J-1 Attachment (1) - Statement Of Work – 12 Pages, With Exhibit A - DD Form 1423,
Contract Data Requirements List**

**J-2 Attachment (2) - DD 254, Contract Security Classification Specification Form Ser
026-99 Dated 08 JUN 99 - 2 Pages**

J-3 Attachment (3) - Personnel Qualifications – 4 pages.

PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION - K
REPRESENTATIONS, CERTIFICATIONS
AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

K-1 Representations, Certifications, and Other Statements of Offerors or Respondents

Each Offeror must submit a completed Representations, Certifications, and Other Statements Of Offerors or Respondents with its proposal which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/rep&certs.htm>

K-2 FILL IN FOR FAR 52.219-1 - SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 1998)

The fill in information is as follows:

The standard industrial classification (SIC) code for this acquisition is 8731.

The small business size standard is 500 employees.

K-3 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING

The Offeror's CAGE Code is {fill-in}_____.

See DFARS 252.204-7001 in Section L for procedures on requesting a CAGE Code.

SECTION L
INSTRUCTIONS CONDITIONS AND NOTICES
TO OFFERORS OR RESPONDENTS

L-1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

FAR CLAUSE TITLE

52.204-6	-	Data Universal Numbering System (DUNS) Number (APR 1998)
52.214-34	-	Submission Of Offers In The English Language (APR 1991)
52.214-35	-	Submission Of Offers In U.S. Currency (APR 1991)
52.215-1	-	Instructions to Offerors- Competitive Acquisition (OCT 1997)
52.215-16	-	Facilities Capital Cost Of Money (OCT 1997)
52.219-24	-	Small Disadvantaged Business Participation Program – Targets (JAN 1999)
52.222-24	-	Preaward On-Site Equal Opportunity Compliance Evaluation (FEB 1999)
52.237-1	-	Site Visit (APR 1984)
52.252-5	-	Authorized Deviations in Provisions (APR 1984)

L-2 FAR 52.211-14 - NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a ☐ DX rated order; ☒ DO rated order certified for national use under the Defense Priorities and Allocations system (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L-3 FAR 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)

(a) *Exceptions from cost or pricing data.* (1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable.

(i) *Identification of the law or regulation establishing the price offered.* If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) *Commercial item exception.* For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously

been sold in the commercial market that is adequate for evaluating the reasonableness of the price for this acquisition. Such information may include--

(A) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(B) For market priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(C) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the offeror's determination of the prices to be offered in the catalog or marketplace.

(b) *Requirements for cost or pricing data.* If the offeror is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The offeror shall prepare and submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

(2) As soon as practicable after agreement on price, but before contract award (except for unpriced actions such as letter contracts), the offeror shall submit a Certificate of Current Cost or Pricing Data, as prescribed in FAR 15.406-2.

L-4 FAR 52.216-1 - TYPE OF CONTRACT (APR 1984)

The Government contemplates award of an Indefinite Delivery Indefinite Quantity type contract with Cost-Plus-Fixed-Fee Term form Task or Delivery orders resulting from this solicitation.

L-5 FAR 52.233-2 - SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the Control Desk, Code 3200, Bldg. 222, Rm. 115, Naval Research Laboratory, 4555 Overlook Ave., S.W., Washington DC 20375-5326.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-6 DFARS 252.204-7001 - COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (DEC 1991)

(a) The Offeror is requested to enter its CAGE code on its offer in the block with its name and

address. The CAGE code entered must be for that name and address. Enter CAGE Before the number.

- (b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Services Center (DLSC). The Contracting Officer will--
 - (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of the Commercial and Government Entity (CAGE) Code;
 - (2) Complete section A and forward the form to DLSC; and
 - (3) Notify the Contractor of its assigned CAGE code.
- (c) Do not delay submission of the offer pending receipt of a CAGE code.

L-7 DFARS 252.227-7017 - IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995)

- (a) The terms used in this provision are defined in following clause or clauses contained in this solicitation--
 - (1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
 - (2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
- (b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.
- (c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.
- (d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror: Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.

The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software to be Furnished With Restrictions*	Basis for Assertion**	Asserted Rights Category***	Name of Person Asserting Restrictions****
(LIST)*****.	(LIST)	(LIST)	(LIST)

* For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For computer software or computer software documentation identify the software or documentation.

** Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development

was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

*** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses). Corporation, individual, or other person, as appropriate.

**** Enter "none" when all data or software will be submitted without restrictions.

Date _____

Printed Name and Title _____

Signature _____

(End of identification and assertion)

- (e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.
- (f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

L-8 GOVERNMENT-FURNISHED PROPERTY

No material, labor, or facilities will be furnished by the Government unless provided for in the solicitation.

L-9 INQUIRIES CONCERNING THE RFP

Any questions concerning the RFP must be submitted in writing to the Contracting Officer at the location noted in blocks 7 and 9 of the Standard Form 33, "Solicitation, Offer and Award," no less than fifteen (15) days before closing. The Government will not consider questions received after this date. Offerors are cautioned against directing any questions concerning this RFP to technical personnel at the Naval Research Laboratory.

L-10 INSTRUCTIONS FOR SUBMISSION AND INFORMATION REQUIRED TO EVALUATE PROPOSALS

(1) Information for the technical/management proposal shall be placed in Volume I and be completely separate from the business proposal (Volume II).

(2) Proposal Identification/Mailing - The proposal should be packaged for delivery so as to permit safe and timely arrival at destination. The proposal package should be sent to the address shown in Block 7 of the RFP face page and marked:

Solicitation No. N00173-99-R-KK03

Closing Date:

(As specified in Block 9, RFP face page)

Attn: Code 3220.KK

(3) Proposal Format and Length - No attempt is made to restrict the proposal format and style. However, the proposal should be written and organized so as to be compatible with the RFP, the Statement of Work, company's organization and accounting structure, and proposed cost estimate. Offerors are encouraged to use recycled paper and maximize the use of double sided copying when preparing responses to solicitations.

L-11 VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 6 COPIES

(1) Include a matrix indicating proposed labor hours by skill category required to perform the statement of work. This matrix shall not contain labor rates or any other indication of price.

(2) The following information is required for evaluation of your technical/management proposal:

The proposals should contain resumes of proposed personnel to determine whether they meet the qualifications stated in Attachment No. 3. This information should include the background pertinent experience and the length of time each person will be working on the project. This information should include the education level, experience(both general and project related). The proposal should also indicate the availability of sufficient key project professional and technical contractor personnel.

The proposals should indicate whether the contractor has a thorough understanding of the purpose and objectives of the scope of work, a comprehension of the problem and a sound technical approach that will satisfy the objectives and requirements of the Statement of Work. The proposal should demonstrate that the offeror has a clear understanding of semiconductor processes and their interactions as stated in the Statement of Work.

The proposals should indicate the company's experience on similar or related projects as evidenced by a narrative description of the experience. This narrative should clearly indicate the relationship of the experience to this project and provide details, such as a description of the project, and identification of the sponsoring agency.

PAST PERFORMANCE INFORMATION

(a) Offerors shall submit the following information as part of their proposal. (Offerors are encouraged to submit the information prior to other parts of the proposal to assist the government in reducing the length of the evaluation period.) List the last 3 contracts or subcontracts completed during the past three years for services similar in nature to this requirement. Include in the 3 any current contracts or subcontracts for similar services that were awarded at least one year prior to the date of this solicitation. Offerors that have no similar previous or current contracts should provide the requested information for proposed subcontractors that will perform major or critical aspects of the requirement for the proposed effort. Past performance information should also be furnished for the project manager or key personnel responsible for critical or major aspects of the requirement.

This information should include:

1. Name of contracting organization.
2. Contract number
3. Contract type
4. Total contract value
5. Description of the contract work
6. Contracting officer and telephone number
7. Contracting officer's representative, program manager, or similar official and telephone number

(b) Offerors shall contact the contracting organizations identified pursuant to paragraph (a) as soon as possible and request them to send past performance information on the identified contracts to the address in Block 7 of the face page of this solicitation. The past performance report which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/home.htm> is to be provided to the contracting organization for this purpose. If the contracting organization has already collected past performance information on the contract pursuant to FAR Subpart 42.15, the format used to collect the information may be used instead of the past performance report.

(c) Offerors may include in their proposals specific information relating to problems encountered in performing the identified contracts and any corrective actions by the offeror. Offerors should not provide general information on their performance on the identified contracts as this will be obtained from the contracting organizations.

L-12 VOLUME II - BUSINESS PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 6 COPIES

(1) COST PROPOSAL

The offeror shall submit a business proposal that includes a cost proposal with supporting information for each cost element consistent with offeror's cost accounting system. The supporting breakdown should include such elements as materials, direct labor, indirect cost, and other costs such as travel. The offeror shall provide exhibits as necessary to substantiate the cost elements. Should rates be used in the proposal which are not DCAA approved, the offeror shall provide complete documentation and the rationale for their use at time of proposal submission.

(2) SMALL BUSINESS PARTICIPATION

(a) In addition to complying with the clause at FAR 52.219-9, Small Business Subcontracting Plan (Jan 1999) with its Alternate II, proposals must include information to permit evaluation of the extent of participation of small businesses and historical black colleges or universities and minority institutions in performance of the contract. Participation to be identified may be in the form of a joint venture, teaming arrangement, or subcontract. Small business concerns that are not required by FAR 52.219-9 to submit a subcontracting plan must indicate the extent to which proposed joint ventures, teaming arrangements, or subcontracts are with historically black colleges or universities and minority institutions. Information provided should include the extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

(b) Proposals must also include information to permit evaluation of the extent of participation of small disadvantaged business concerns in the performance of the contract. See the provision at FAR 52.219-24, Small Disadvantaged Business Participation Program-Targets (JAN 1999) and the clause at 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (JAN 1999). Any targets will be incorporated into and become part of any resulting contract. Information provided should include the extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

L-13 ANTICIPATED DISTRIBUTION OF DIRECT LABOR HOURS BY LABOR CATEGORIES

The following is the anticipated distribution by labor category of the maximum level of effort. This distribution shall be used by the offeror in preparing the cost proposal. If the offeror uses labor category terminology other than that used in this provision, the offeror must provide a matrix clearly relating their proposed labor categories to those in this provision. For the purposes of preparing their proposals, offerors may assume that the maximum number of hours will be spread evenly over the five year period.

SOW Task	MIN	MAX
TASK 1		
Subtask 1		
Reliability Engineer	0	5,000
Subtask 2		
Processing Technician	7,000	10,000
Subtask 3		
MBE Technician	2,000	6,000
Subtask 4		
Ion Implantation Technician	1,000	5,000
Subtask 5		
Electrical Engineer - Electrical Circuit Design	0	5,000
Subtask 6		
Microwave Modeling and Simulation Engineer	0	5,000
Subtask 7		
Electrical Engineer - Electrical Circuit Design	3,000	8,000
Subtask 8		
Consultant Services	0	1,000
Total – Task 1	13,000	45,000

TASK 2**Subtask 1**

Electrical Engineer- Electrical Circuit Design	0	10,000
---	---	--------

Subtask 2

Sr. Eng. Technician	6,000	10,000
---------------------	-------	--------

Total – Task 2	6,000	20,000
-----------------------	--------------	---------------

TASK 3**Subtask 1**

Research Scientist – Electron Beam Lithography	10,000	12,000
---	--------	--------

Subtask 2

Electronics Technician	5,000	7,000
------------------------	-------	-------

Subtask 3

Electronics Technician	3,000	5,000
------------------------	-------	-------

Subtask 4

Photo Technician	10,000	12,000
------------------	--------	--------

Subtask 5

Laboratory Technician	2,000	3,000
-----------------------	-------	-------

Total – Task 3	30,000	39,000
-----------------------	---------------	---------------

TASK 4**Subtask 1**

Researcher – Pulsed Laser Simulation	1,600	10,000
---	-------	--------

Researcher – Radiation Effects Measurements – Superconductor Devices	800	5,000
Researcher - Radiation Effects Measurements - Solar Cells	800	5,000
Researcher – Ultrafast Laser Spectroscopy	1,600	10,000
Electrical Engineer – Test Systems	3,200	20,000
Researcher– Radiation Damage	800	4,800
Researcher– Radiation Effects Measurements – Computer Codes	250	1,500
Researcher – Radiation Effects Measurements Modeling	800	5,000
Vacuum Systems Technician	1,600	10,000

Subtask 2

Researcher- Radiation Effects Measurements – Superconductor Devices	800	5,000
Researcher – Radiation Effects Measurements – Solar Cells	800	5,000
Researcher- Radiation Effects Measurements – Computer Codes	250	1,500
Total – Task 4	13,300	82,800

SOW Task	MIN	MAX
TASK 5		
Subtask 1		
Electrical Engineer - Electrical Circuit Design and Test	0	10,000
Subtask 2		
Research Scientist – Wafer Bonding	0	10,000
Total – Task 5	0	20,000
TOTAL – ALL TASKS	62,300	206,800

L-14 ANTICIPATED TRAVEL REQUIREMENTS

Offerors should use the following estimate of travel in preparing their proposals:

Task	Year	No. of Trips	No. of People	No. of Days	Destination
1	1	1	1	5	East Coast
1	2	1	1	5	East Coast
1	3	1	1	5	East Coast
1	4	1	1	5	East Coast
1	5	1	1	5	East Coast
2	1	2	1	5	East Coast
2	2	2	1	5	East Coast
2	3	2	1	5	East Coast
2	4	2	1	5	East Coast
2	5	2	1	5	East Coast
3	1	1	1	3	East Coast
3	2	1	1	3	East Coast
3	3	1	1	3	East Coast
3	4	1	1	3	East Coast
3	5	1	1	3	East Coast

4	1	2	5	14	East Coast
4	2	2	5	14	East Coast
4	3	2	5	14	East Coast
4	4	2	5	14	East Coast
4	5	2	5	14	East Coast
4	1	20	4	3	East Coast
4	2	20	4	3	East Coast
4	3	20	4	3	East Coast
4	4	20	4	3	East Coast
4	5	20	4	3	East Coast
5	1	1	1	5	East Coast
5	2	1	1	5	East Coast
5	3	1	1	5	East Coast
5	4	1	1	5	East Coast
5	5	1	1	5	East Coast

L-15 MATERIALS ESTIMATE

For the purpose of preparing their proposals, offerors should utilize the following estimate per year for material requirements. Offerors should note that these are direct costs, and that they should add any applicable indirect costs.

TASK	Each Year	Five Years
1	\$20,000	\$100,000
2	\$4,000	\$20,000
3	\$5,000	\$25,000
4	\$15,000	\$75,000
5	\$20,000	\$100,000
Total	\$64,000	\$320,000

SECTION M**EVALUATION FACTORS FOR AWARD****M-1 EVALUATION**

Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed cost and other factors considered. The Government reserves the right to make award to other than the low offeror. Although technical considerations are more important than the cost factor, the closer the technical scores of the various proposals are to one another, the more important the business considerations become.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following criteria. The technical factor is more important than the cost factor. Technical factors are listed in descending order of importance. Factors two and three are equal in value.

M-2-1. TECHNICAL/MANAGEMENT**(1) PERSONNEL QUALIFICATIONS**

The proposals will be evaluated to determine if the experience and qualifications of the proposed personnel are consistent with the qualifications as stated in Attachment No. 3. The background, pertinent experience, and the length of time each individual will be working on the project will be considered. This will include the education level, experience, both general and project related, and availability of sufficient key project professional and technical contractor personnel. The offeror's past performance with emphasis placed on the expertise of key personnel

(2) TECHNICAL APPROACH

Proposals will be evaluated on the basis of whether the offeror demonstrates a thorough understanding of the purpose and objectives of the scope of work, comprehension of the problems, and has a sound technical approach that will satisfy the objectives and requirements of the Statement of Work. The offeror must display a clear understanding of semiconductor processes and their interactions as stated in the Statement of Work.

(3) CORPORATE EXPERIENCE / PAST PERFORMANCE

The proposals will be evaluated on the adequacy of company experience on similar or related projects as evidenced by a narrative description of the experience. This narrative should clearly show the relationship of the past experience to this project and provide details such as project description, and identify the sponsoring agency.

Past performance will be evaluated on the basis of the quality of the work performed, timeliness of performance, cost control, and business relations. The evaluation will be based on the information provided pursuant to Section L and other sources if available. Offerors that have no relevant performance history or for which past performance information is not available will not be evaluated favorably or unfavorably on past performance. The government may begin proposal evaluation prior to receipt of past performance information. If, after completion of proposal evaluation except evaluation of past performance, the contracting officer determines that evaluation of past performance will not affect the outcome of competitive selection, the contracting officer may waive its evaluation in accordance with FAR 15.304(c)(3)(iii).

M-2-2 COST TO THE GOVERNMENT

Proposed estimated cost to the Government. The Government may adjust the proposed cost for purposes of evaluation based upon an evaluation of cost realism. Cost Realism means that the costs in an offeror's proposal are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the various elements of the offeror's technical proposal. The cost realism evaluation includes an analysis of the adequacy of the hours, labor mix, and other direct costs to perform the work as proposed in the technical proposal as well as the proposed labor and indirect rates. It also includes evaluation of the likelihood that the risks inherent in the offeror's technical approach will result in higher actual costs than anticipated.

M-2-3 SMALL BUSINESS PARTICIPATION

- (a) The extent of participation of small businesses and historically black colleges or universities and minority institutions in performance of the contract will be evaluated on the basis of the proposed extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.
- (b) The extent of participation of small disadvantaged business concerns in the performance of the contract will be evaluated on the basis of the proposed extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

STATEMENT OF WORK

INTRODUCTION

The Naval Research Laboratory (NRL) conducts a broad range of research efforts linked to electronic devices, materials, circuits and assemblies. The work is both theoretical and experimental and often involves the development of analytical, fabrication, diagnostic and characterization techniques. The objective of this electronics research is to provide new state-of-the-art electronic devices and circuits for experimental systems used to solve problems of military significance. Areas of electronics emphasis include solid state electronics, biochemical sensors, semiconductor materials, surface and interface science, microstructures, nanostructures, opto-electronics, microwave components and studies of magnetic phenomena. Special emphasis is placed on silicon, III-V compound semiconductors, superconductors, reliability physics of electron devices, the hardening and vulnerability assessment of electron devices, components and assemblies, the development of high-performance microwave and millimeter wave tubes and components, and the development of submicron fabrication techniques.

SCOPE

These research efforts require the expertise of skilled, highly-technically qualified contractor scientists, engineers and technicians to carry out these studies. The range in skills required include: reliability physics analysis, reliability testing development, analysis and data reduction; solid state device fabrication; maintenance, operation and upgrade experience of molecular beam epitaxy (MBE) machines; maintenance, operation and upgrade experience of ion implanters; microwave measurements, microwave device modeling and simulation; microwave circuit design, fabrication and testing; fabrication and evaluation of infrared (IR) imaging devices; growth of MBE layers for IR devices; maintenance, operation and upgrade of electron-beam lithography equipment; integrated circuit assembly; maintenance, operation and upgrade of high resolution photolithography equipment; glass blowing.

The R&D requirements include tasks that vary considerably in their scope and complexity. However the tasks are interrelated in that they support the central mission of the NRL and must be coordinated with each other.

The contractor shall provide on a level of effort basis, an estimated total maximum of 206,800 man hours of scientific, technical and engineering work as stated in Section L. Specific categories of personnel to perform work shall consist of those direct labor classifications proposed by the contractor which are included in the resultant contract. The required personnel qualifications to perform individual tasks are indicated in Section L and Attachment No. 3.

3.0 TASK DESCRIPTIONS

3.1 TASK 1: Microwave Solid-State Technology Support

3.1.1 Background

The Naval Research Laboratory carries out a variety of research and development activities involving the design, development and application of microwave solid-state devices. This includes failure physics and reliability investigations, growth of semiconductor heterostructures, microwave device and circuit fabrication and testing, and theoretical studies of device structures. This statement-of-work describes requirements for engineering services for several key research projects at NRL in Washington, DC.

Sub-Task 1: Reliability Testing of Devices

This sub-task involves numerous activities supporting the development of robust reliable microwave semiconductor devices. Work shall include design, assembly and maintenance of RF and dc test apparatus for reliability testing, design and construction of test fixtures, monitoring of reliability tests, and measurement of pertinent RF and dc parameters during test. Before initiating reliability testing, the contractor shall characterize the electrical, optical and/or thermal properties of the devices. Electrical stress tests shall then be performed to establish limits for RF and dc operation for lifetests. In most cases, temperature stress tests shall also be performed under RF operation to establish the temperature limits for reliability testing. Lifetests shall be conducted at elevated temperatures, under dc bias, and at RF frequencies. Test data shall be accumulated, reduced and made available to NRL scientists on a device-by-device as-well-as a device-class basis.

Failure analysis of the failed devices will be performed to determine failure modes and mechanisms. This will entail analyzing lifetest data to calculate median time to failure, activation energies for particular failure mechanisms and standard deviations. Sources of error will also be determined. Numerous analysis techniques will be used to evaluate changes in physical and chemical properties, thermal profiles, and trapping phenomena related to device aging. These evaluation techniques include: infrared imaging, atomic-force-microscopy, scanning electron microscopy, electron beam induced current detection and deep level transient spectroscopy. Raw data, graphical data and photographs pertinent to these tests shall be provided to NRL scientists.

Radiation-effects testing of semiconductor devices shall also be occasionally required. State-of-the-art devices shall be irradiated by pulsed electrons or flash X-rays. Devices shall be evaluated before, during and after irradiation. Heavy ion effects shall be studied to understand single event and total fluency effects.

Minimum Level of Effort: 0 hours

MAXIMUM LEVEL OF EFFORT: 5,000 hours

Sub-Task 2: Fabrication of Solid-State Devices

This sub-task requires hands-on assistance in the routine chemical processing of solid-state devices, including metal and dielectric evaporation, wet etching and photolithography. It will entail maintenance and repair of laboratory and specialized processing equipment as well as monitoring the supply of chemicals needed in the processing laboratory and replenishing them when appropriate

MINIMUM LEVEL OF EFFORT: 7,000 hours

MAXIMUM LEVEL OF EFFORT: 10,000 hours

Sub-Task 3: Maintenance, Operation and Upgrading of the III-V Molecular Beam Facility

This sub-task requires support in maintaining, operating and the upgrading Varian 360 and V088 III-V MBE machines. Routine maintenance tasks shall be performed as well as the trouble-shooting and repair of the machines when they fail. Routine growth programs on the machine shall be executed. Assistance in the planning and execution of upgrades to the machines shall be given in order to enhance output or increase overall capability.

Minimum Level of Effort: 2,000 hours

MAXIMUM LEVEL OF EFFORT: 6,000 HOURS

Sub-Task 4: Maintenance, Operation and Upgrading of the 300 KeV Ion Implanter

This sub-task requires support in maintaining, operating and upgrading the Electronics Science and Technology Division 300 KeV Ion Implanter. Routine maintenance tasks shall be performed as well as the trouble-shooting and repair of the machines when it fail. Routine implantation runs on the machine shall be executed. Assistance in the planning and execution of upgrades to the machines shall be given in order to enhance output or increase overall capability.

Minimum Level of Effort: 1,000 hours

MAXIMUM LEVEL OF EFFORT: 5,000 HOURS

Sub-Task 5: Microwave Measurements

This sub-task involves use of network analyzers, spectrum analyzers and other microwave test equipment to determine the linear and/or nonlinear characteristics of passive and active microwave devices. Linear testing typically consists of obtaining small-signal scattering parameters over a range of frequency after appropriate calibration and de-embedding procedures to remove intrinsic test-set and fixture errors. S-parameters are reduced to key performance factors or parameters useful for device modeling by use of suitable commercial or specialized software. Nonlinear testing consists of measuring such parameters as total power output, gain compression and intermodulation distortion and harmonic generation.

Minimum Level of Effort: 0 hours

MAXIMUM LEVEL OF EFFORT: 5,000 HOURS

Sub-Task 6: Microwave Device Modeling and Simulation

This sub-task involves developing equivalent circuit device models from measured data. The modeling shall be performed for such devices as FETs, HEMTs and HBTs. Commercial software design tools shall be utilized where applicable. A second element of this sub-task is the development and application of specialized physics-based codes to better understand the basic operation of a given device. These codes shall also be used to evaluate failure mechanisms in various device structures. The overall goal of this sub-task is to gain a better understanding of ultimate device limitations. In order to guide the realization of improved device designs.

Minimum Level of Effort: 0 hours

Maximum Level of Effort: 5,000 hours

Sub-Task 7: Microwave Circuit Design , Fabrication and Testing

This sub-task entails development of hybrid microwave integrated circuits to perform given system or sub-system functions, e.g. communication, radar-jamming or surveillance. Work entails use of commercial RF computer-aided-design tools for circuit design and optimization. Circuits shall commonly be fabricated using printed circuit board techniques with commercial components but on occasion specially developed NRL components shall be utilized. Circuits shall be evaluated in the laboratory using standard commercial test-equipment such as network analyzers, spectrum analyzers and sampling oscilloscopes. Occasionally circuits will be subjected to -off-site tests for evaluation in an operational setting.

Minimum Level of Effort: 3,000 hours

Maximum Level of Effort: 8,000 hours

Sub-Task 8: Consulting Services

This sub-task consists of providing technical guidance in the general areas of the design, modeling, performance and applications of solid-state microwave devices and circuits. This includes providing information as to the latest developments in active and passive microwave technology as well as high-speed analog and digital signal processing techniques.

Minimum Level of Effort: 0 hours

MAXIMUM LEVEL OF EFFORT: 1,000 hours

3.2 Task 2: Development and Evaluation of Infrared Materials and Devices

3.2.1 Background

The programs of the Imaging Devices Section, Code 6818, of the Electronics Science and Technology Division require expert assistance with the growth and evaluation of electronic materials and the fabrication and characterization of microelectronic devices. Current programs involve research and development on:

- (1) fabrication and characterization of infra-red (IR) imaging devices,
- (2) growth of heterostructure layers by molecular beam epitaxy (MBE) for IR devices,

For each sub-task described below, the contractor shall keep complete records of all work performed, including fabrication procedures, physical and electrical characterization, and data analysis. Records shall be maintained by the contractor and provided to the Government on a monthly basis. The contractor shall consult with navy personnel on the design of electronic test structures and the development of designs that meet the needs of the experimental program at the Naval Research Laboratory (NRL) and which can best be achieved with existing technologies and equipment.

Sub-Task 1: Fabrication and characterization of IR imaging devices.

Minimum number of hours: 0

Maximum number of hours: 10,000

This task consists of work in three area: materials preparation, fabrication of IR imager and test devices, and material and device evaluation.

1a) Materials preparation.

The contractor shall be responsible for evaluation and surface preparation of materials used as substrates for MBE growth. Generally these materials shall be gallium-antimonide (GaSb), gallium arsenide (GaAs), and silicon (Si) or other common semiconductors. The contractor shall determine the procedures needed to prepare a planar, specular, single crystal surface for growth. Suitable processes are mechanical, and chemical-mechanical polishing and chemical etching. The contractor shall evaluate the substrate material properties using Fourier Transform Infrared Spectroscopy (FTIR), ellipsometry, and chemical decoration etch processes.

1b) Fabrication of IR imager and test devices

The contractor will fabricate test structures as well as photo-conductive, photo-voltaic, and metal-insulator-semiconductor (MIS) devices [capacitors, FETs, diodes, photoconductors, and transfer registers], using semiconductor materials such as Si, GaAs, GaSb, and MBE grown layers. Devices shall be fabricated from materials, crystal wafers, and/or epitaxially grown layered crystalline films and other raw materials, supplied by the Government. Dielectric passivation schemes are used to form passivation layers on these semiconductor materials at temperatures compatible with the specific material. Existing, government owned equipment shall be used for the chemical-vapor deposition (CVD) of SiO₂ layers in the fabrication of photovoltaic and MIS devices. The contractor will be responsible for performing the necessary processing sequences such as polishing, etching, surface passivation, photolithographic pattern definition, dicing, metal deposition, and wire bonding.

1c) Material and device evaluation.

The contractor shall electrically characterize test structures, analyze the data, and interpret the results. The contractor shall use device measurements to calculate material properties as a guide to the grown material properties. The contractor will record and reduce the data into a format suitable for analysis. Evaluations will include the standard measurements of device properties such as current-voltage (I-V), capacitance-voltage (C-V), and ac conductance. Measurements of bulk material properties and processed surface properties shall be made to validate the usefulness of subsequent processing steps. This will be done using Hall effect measurements, ellipsometry, optical microscopy and other materials measurement procedures as required. The contractor must also suggest and design novel test devices and structures to provide information on the use of these novel materials.

Sub-Task 2: Growth of heterostructure layers by molecular beam epitaxy (MBE) for IR devices.

Minimum number of hours: 6,000

Maximum number of hours: 10,000

The contractor shall use an NRL RIBER MBE machine to deposit single crystal layers of narrow gap semiconductors using elements such as indium, gallium, etc., and other atoms suitable for depositing single crystal and superlattice materials. This task shall include the following responsibilities:

- The selection and preparation of single crystal substrates.
- The evaluation of substrate quality and suitability, using techniques such as X-ray diffraction, optical microscopy, defect etching and other suitable analysis tools.
- The preparation of substrates by cleaning, polishing and etching where needed.
- The operation of a computer controlled MBE machine to deposit the necessary layers.
- The evaluation of the electrical, structural and surface properties of the completed layers.
- The design and fabrication of suitable device structures to evaluate the suitability of the layers for use as narrow gap IR sensing devices.

The contractors responsibilities for the operation and upkeep of the RIBER machine shall include the handling of the necessary source materials and the typical procedures to load MBE cells. Routine maintenance and operations shall also be the responsibility of the contractor. The contractor's evaluation of materials shall include making Hall measurements to characterize the electrical properties of the layers deposited, and the use of x-ray diffraction and FTIR transmission and reflection spectroscopy to characterize the structural and optical properties of the layers deposited. The contractor shall cooperate with NRL personnel to design and deposit tailored superlattice layer structures to evaluate deposition processes and fabricate unique devices.

TASK 3: NANO ELECTRONICS FACILITY SUPPORT

3.3.1 Background

The Naval Research Laboratory operates a state of the art nanometer and micrometer fabrication facility identified as the Nanoelectronics Processing Facility, NPF, Code 6804. This facility specializes in making structures and devices that require the equipment (e.g. advanced patterning using electron beam lithography), spaces (class 100 clean benches), and skills (appropriate mix of skilled technicians and professionals) associated with microelectronics and nanoelectronics technologies. Although the end user of the fabricated prototype structure or device is likely to be part of an experiment to benefit electronics technologies of importance to the Navy; the facility also creates structures and devices with other scientific or technological goals being pursued at NRL or to other similar research institutions.

Sub-Task 1: E-Beam Lithographic Services

The contractor shall supply high resolution electron beam (e-beam) lithographic services for the NPF. The e-beam to be used is the JEOL 5DII Nanowriter. The personnel selected must be capable of using the JEOL 5DII for direct-write on wafer projects with critical dimensions in the 0.1 micron range. A working knowledge of JEOL conversion software is also required to convert GDS pattern files into JEOL 51 machine code.

Minimum Level of Effort: 10,000 hours

Maximum Level of Effort: 12,000 hours

Sub-Task 2: Assemble Integrated Circuit Devices

The contractor shall supply personnel capable of assembling micro and nanoelectronic devices using the following equipment; wafer saw, ball and wedge bonders, and epoxy die attachers.

Minimum Level of Effort: 5,000 hours

Maximum Level of Effort: 7,000 hours

Sub-Task 3: Supply of Clean Wafers

The contractor shall supply NRL with wafers cleaned to accepted microelectronics industry standards (such as are listed in the SEMI semiconductor industry standards manual) with regard to organic, inorganic and oxidation related contamination.

Minimum Level of Effort: 3,000 hours

Maximum Level of Effort: 5,000 hours

Sub-Task 4: High Resolution Photolithographic Services

The contractor shall provide UV and Deep-UV lithographic expertise to NPF. Exposures can be aligned to existing substrate features or the exposure can be unaligned. Minimum feature size of 1 micrometer will be expected routinely on a 3" wafers.

Minimum Level of Effort: 10,000 hours

Maximum Level of Effort: 12,000 hours

Sub-Task 5: Glass Blowing

The contractor shall provide skilled personnel capable of constructing and repairing pyrex and quartz laboratory apparatus.

Minimum Level of Effort: 2,000 hours

Maximum Level of Effort: 3,000 hours

TASK 4: RADIATION EFFECTS EXPERIMENTAL WORK

Background

The Radiation Effects Branch performs basic and applied research in the effects of radiation on microelectronic devices, materials, and systems. The sources of radiation include the natural radiation environment of space and, at high altitude, radiation sources such as accelerators, and radiation from nuclear events. The microelectronic devices include advanced digital and analog technologies such as quantum devices and commercial microprocessors. The materials include LT-GaAs, SOI, and advanced solar cells. The systems include subsystems for space systems. Effects include single event effects, total dose changes (especially including space low-dose-rate effects), displacement damage effects, weapon dose-rate effects and other system effects.

Sub-Task 1: EXPERIMENTS AND TESTING

The Contractor shall carry out the following radiation effects experimental work at NRL and other radiation facilities as required:

Perform particle and gamma irradiations at various facilities on various kinds of advanced devices such as solar cells, integrated circuits detectors, metal oxide semiconductor field effect transistors (MOSFETS's), charge coupled devices (CCD'S), high temperature superconductors, and Resonant Tunneling Devices (RTD) quantum devices. Schedule time and oversee dosimetry in a coordinated radiation and device environment. Characterize devices before and after irradiation, including post irradiation effects and annealing.

Characterize properties of semiconductor materials and devices such as carrier concentration, minority carrier lifetime, trapping levels and cross sections, conversion efficiency and mobility using a range of experimental techniques such as Hall effect, electrochemical capacitance profiling, deep level transient spectroscopy, quantum efficiency and reflectance, and current-voltage measurements made both in the dark and illuminated. Characterization to be made over a range of temperatures and other environmental conditions. Support an experimental program testing single event effects induced by ions and pulsed lasers on advanced integrated circuits and technologies.

Minimum Level of Effort: 11,450 hours

MAXIMUM LEVEL OF EFFORT: 71,300 HOURS

Sub Task 2: MODELING:

The contractor shall carry out the following radiation effects modeling work as required:

Extend various modeling and statistical techniques to energy deposition for both ionizing and non ionizing effects in semiconductor and dielectric materials and devices, with feature sizes covering the macro-, micro, and nano-regimes. Apply difference modeling and statistical approaches to space radiation environmental effects such as solar proton events and trapped radiation belts.

Perform calculations using various computer codes available at NRL on the response of test structures and integrated circuits to energetic ion and pulsed laser perturbations on a picosecond time scale. This will include the effects of the radial extent and shape of the initial charge track and timing effects related to the relationship between the time of interaction and the changing bias conditions of a dynamic circuit.

Support research investigation on the basic mechanisms of radiation effects including total ionizing dose, dose rate, particle properties and fabrication technology.

Minimum Level of Effort: 1,850 hours

MAXIMUM LEVEL OF EFFORT: 11,500 HOURS

TASK 5: MICROELECTRONIC TECHNOLOGY SUPPORT

Background

The Naval Research Laboratory carries out a variety of activities involving research and development on:

1. Fabrication, design, and testing of both low voltage and high voltage analog circuits and devices
2. Fabrication and characterization of novel heterojunction material substrates and devices by utilization of direct wafer bonding.

This task describes requirements for engineering services for several key research projects at NRL in Washington, D.C. For each subtask described below, the contractor shall keep complete records of all work performed, including fabrication procedures, physical and electrical characterization, and data analysis. The contractor shall consult with Navy personnel on the design of electronic test structures and the development of designs that meet the needs of the experimental program at NRL.

Sub Task 1: Microelectronic Devices and Circuit Design, Testing, and Fabrication

This subtask entails development of analog circuits and devices to perform the given system or sub-system function, e.g. communication, electronic warfare, efficient power switching. The work entails the use of commercial computer-aided design (CAD) for circuit design and optimization, and for layout of analog CMOS devices and circuits. The circuits shall be evaluated in the laboratory using standard commercial test equipment such as oscilloscopes and spectrum analyzers. The contractor will design experiments for the fabrication of microelectronic devices and will also electrically characterize both low voltage and high voltage microelectronic devices.

Minimum number of hours: 0

MAXIMUM LEVEL OF HOURS : 10,000

Sub Task 2: Wafer Bonding Fabrication and Characterization

The contractor will fabricate new types of electronics material substrates and new types of electronic devices by using direct wafer bonding. The direct bonded wafers will include substrates of silicon, silicon germanium, silicon carbide, gallium arsenide, gallium antimonide and other III-V materials. The contractor shall develop appropriate methods for cleaning and etching the semiconductor surfaces prior to direct wafer bonding. Existing Government owned equipment shall be used for bonding of semiconductor substrates. The contractor shall investigate the mechanical and electronic properties of the bonded interface. The contractor will fabricate both homojunction and heterojunction devices by direct wafer bonding. The fabricated electronic devices include low voltage microelectronic devices, high voltage power devices, and microwave devices.

Minimum number of hours: 0

MAXIMUM LEVEL OF HOURS: 10,000

4.0 DELIVERABLES

The contractor shall provide a monthly on-site labor report by the fifth working day of each month, for the preceding month. This report must include the reporting period, contract number, contract value, current funding, data submitted and on-site labor hours.

The contractor shall provide a monthly report to the COR by the fifteenth day of each month, for the preceding month. This report shall include a report of all labor expenditures (person, hours worked, cost); materials (description, cost, and use on contract); and travel (traveler's name, dates of trip, and cost).

The contractor shall provide a quarterly progress report to the COR. This report shall include progress made for the quarter and work planned for the following quarter.

The contractor shall provide a yearly technical report to the COR within thirty days after the completion of each calendar year of the contract. This report shall include a yearly technical summary for each task.

The contractor shall provide a final technical report to the COR within sixty days of completion of the contract. This report shall include a comprehensive interpretation of findings on this contract.

The contractor shall provide data documentation to the COR as required. This documentation may include data reduced and analyzed data, data collection, analysis, papers, reports, view graphs and instrumentation control software developed in carrying out the research effort.

All reporting shall be done in accordance with Exhibit A – DD Form 1423.

(1 Data Item)

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PRI No. listed in Block E.

[illegible]

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST
(2 Data Items)Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____	
D. SYSTEM / ITEM		E. CONTRACT / PR NO.		F. CONTRACTOR	
1. DATA ITEM NO. A002	2. TITLE OF DATA ITEM Monthly Cost Reports			3. SUBTITLE	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE SOW, Para 4.0		6. REQUIRING OFFICE NRL Code 6801	
7. DD 250 REQ No	8. DIST STATEMENT REQUIRED	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 45 DAC	14. DISTRIBUTION	
8. APP CODE N/A		11. AS OF DATE 30 DAC	13. DATE OF SUBSEQUENT SUBMISSION ea. 30 days thereafter	a. ADDRESSEE	b. COPIES
16. REMARKS Covers monthly expenditure of funds. This report shall include a report of all labor expenditures (person, hours worked, cost) materials (description, cost and use on contract); and travel (traveler's name, dates of trip, and cost). Report must also show reporting period, the contract value, remaining funding, and provide a breakdown by employee of number of hours worked on site and which task was worked on.					
				15. TOTAL →	
1. DATA ITEM NO. A003		2. TITLE OF DATA ITEM Quarterly Letter/Technical Reports		3. SUBTITLE	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE SOW, Para 4.0		6. REQUIRING OFFICE NRL Code 6801	
7. DD 250 REQ NO	8. DIST STATEMENT REQUIRED	10. FREQUENCY QRTLY	12. DATE OF FIRST SUBMISSION 105 DAC	14. DISTRIBUTION	
8. APP CODE N/A		11. AS OF DATE 90 DAC	13. DATE OF SUBSEQUENT SUBMISSION ea. 90 days thereafter.	a. ADDRESSEE	b. COPIES
16. REMARKS Report on Technical Progress for each task as defined in the Statement of Work for the past three months and future plans for the next three months.					
15. TOTAL →					13
G. PREPARED BY NRL Code 6801		H. DATE 16 JUN 99		I. APPROVED BY	
				J. DATE	

17. PRICE GROUP

18. ESTIMATED
TOTAL PRICE

17. PRICE GROUP

18. ESTIMATED
TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____		
D. SYSTEM / ITEM		E. CONTRACT / PR NO.		F. CONTRACTOR		
1. DATA ITEM NO. A004	2. TITLE OF DATA ITEM Yearly Technical Summary			3. SUBTITLE		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE SOW, Para 4.0		6. REQUIRING OFFICE NRL Code 6801		
7. DD 250 REQ No	8. DIST STATEMENT REQUIRED	10. FREQUENCY ANNLY	12. DATE OF FIRST SUBMISSION 395 DAC	14. DISTRIBUTION		
9. APP CODE N/A		11. AS OF DATE 365 DAC	13. DATE OF SUBSEQUENT SUBMISSION ea. year thereafter	a. ADDRESSEE	b. COPIES	
16. REMARKS Yearly Technical Summary for each task as defined in the Statement of Work.					Draft	Final
				15. TOTAL →		
1. DATA ITEM NO. A005		2. TITLE OF DATA ITEM Final Technical Report		3. SUBTITLE		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE SOW, Para 4.0		6. REQUIRING OFFICE NRL Code 6801		
7. DD 250 REQ NO	8. DIST STATEMENT REQUIRED	10. FREQUENCY ONE/R	12. DATE OF FIRST SUBMISSION 1885 DAC	14. DISTRIBUTION		
9. APP CODE N/A		11. AS OF DATE 1825 DAC	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
16. REMARKS This report will contain all progress and results acheived over the full period of the contract. It should be submitted within 30 days of contract end.					Draft	Final
15. TOTAL →					17	
G. PREPARED BY NRL Code 6801		H. DATE 16 JUN 99		I. APPROVED BY		
				J. DATE		

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____	
D. SYSTEM / ITEM		E. CONTRACT / PR NO.		F. CONTRACTOR	
1. DATA ITEM NO. A006	2. TITLE OF DATA ITEM Miscellaneous Data Documentation			3. SUBTITLE	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE SOW, Para 4.0		6. REQUIRING OFFICE NRL Code 6801	
7. DD 250 REQ No	9. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE NRL 6801	b. COPIES Draft Final Reg Repr
10. REMARKS The Contractor shall provide data documentation to the COR as required.					
1. DATA ITEM NO.		2. TITLE OF DATA ITEM		3. SUBTITLE	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES Draft Final Reg Repr
10. REMARKS					
G. PREPARED BY NRL Code 6801		H. DATE 16 JUN 99	I. APPROVED BY		J. DATE

17. PRICE GROUP

18. ESTIMATED
TOTAL PRICE

17. PRICE GROUP

18. ESTIMATED
TOTAL PRICE

DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>				1. CLEARANCE AND SAFEGUARDING SER: 026-99 a. FACILITY CLEARANCE REQUIRED SECRET b. LEVEL OF SAFEGUARDING REQUIRED SECRET																																																																																					
2. THIS SPECIFICATION IS FOR: (X and complete as applicable)				3. THIS SPECIFICATION IS: (X and complete as applicable)																																																																																					
a. PRIME CONTRACT NUMBER b. SUBCONTRACT NUMBER c. SOLICITATION OR OTHER NUMBER X 68-8029-99		Due Date (YYMMDD) X		a. ORIGINAL (Complete date in all cases) X Date (YYMMDD) 990608 b. REVISED (Supersedes all previous specs) Revision No. Date (YYMMDD) c. FINAL (Complete Item 5 in all cases) Date (YYMMDD)																																																																																					
4. IS THIS A FOLLOW-ON CONTRACT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following: Classified material received or generated under _____ (Preceding Contract Number) is transferred to this follow-on contract.																																																																																									
5. IS THIS A FINAL DD FORM 254? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following: In response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____.																																																																																									
6. CONTRACTOR (Include Commercial and Government Entity (CAGE) Code)																																																																																									
a. NAME, ADDRESS, AND ZIP CODE FOR RFP PURPOSES ONLY, NOT VALID FOR ACTUAL CONTRACT AWARD		b. CAGE CODE 		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) 																																																																																					
7. SUBCONTRACTOR																																																																																									
a. NAME, ADDRESS, AND ZIP CODE N/A		b. CAGE CODE 		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) N/A																																																																																					
8. ACTUAL PERFORMANCE																																																																																									
a. LOCATION N/A		b. CAGE CODE 		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) N/A																																																																																					
9. GENERAL IDENTIFICATION OF THIS PROCUREMENT BROAD RANGE OF RESEARCH EFFORTS LINKED TO ELECTRONIC DEVICES, MATERIALS, CIRCUITS AND ASSEMBLIES.																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">10. THIS CONTRACT WILL REQUIRE ACCESS TO:</td> <td style="width: 5%;">YES</td> <td style="width: 5%;">NO</td> <td style="width: 35%;">11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:</td> <td style="width: 5%;">YES</td> <td style="width: 5%;">NO</td> </tr> <tr> <td>a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION</td> <td></td> <td>X</td> <td>a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY</td> <td></td> <td>X</td> </tr> <tr> <td>b. RESTRICTED DATA</td> <td>X</td> <td></td> <td>b. RECEIVE CLASSIFIED DOCUMENTS ONLY</td> <td>X</td> <td></td> </tr> <tr> <td>c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION</td> <td></td> <td>X</td> <td>c. RECEIVE AND GENERATE CLASSIFIED MATERIAL</td> <td></td> <td>X</td> </tr> <tr> <td>d. FORMERLY RESTRICTED DATA</td> <td>X</td> <td></td> <td>d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE</td> <td></td> <td>X</td> </tr> <tr> <td>e. INTELLIGENCE INFORMATION:</td> <td></td> <td></td> <td>e. PERFORM SERVICES ONLY</td> <td></td> <td>X</td> </tr> <tr> <td>(1) Sensitive Compartmented Information (SCI)</td> <td></td> <td>X</td> <td>f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES</td> <td></td> <td>X</td> </tr> <tr> <td>(2) Non-SCI</td> <td></td> <td>X</td> <td>g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER</td> <td></td> <td>X</td> </tr> <tr> <td>f. SPECIAL ACCESS INFORMATION</td> <td></td> <td>X</td> <td>h. REQUIRE A COMSEC ACCOUNT</td> <td></td> <td>X</td> </tr> <tr> <td>g. NATO INFORMATION</td> <td></td> <td>X</td> <td>i. HAVE TEMPEST REQUIREMENTS</td> <td></td> <td>X</td> </tr> <tr> <td>h. FOREIGN GOVERNMENT INFORMATION</td> <td></td> <td>X</td> <td>j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS</td> <td></td> <td>X</td> </tr> <tr> <td>i. LIMITED DISSEMINATION INFORMATION</td> <td></td> <td>X</td> <td>k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE</td> <td></td> <td>X</td> </tr> <tr> <td>j. FOR OFFICIAL USE ONLY INFORMATION</td> <td></td> <td>X</td> <td>l. OTHER (Specify)</td> <td></td> <td></td> </tr> <tr> <td>k. OTHER (Specify)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						10. THIS CONTRACT WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO	a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X	b. RESTRICTED DATA	X		b. RECEIVE CLASSIFIED DOCUMENTS ONLY	X		c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL		X	d. FORMERLY RESTRICTED DATA	X		d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		X	e. INTELLIGENCE INFORMATION:			e. PERFORM SERVICES ONLY		X	(1) Sensitive Compartmented Information (SCI)		X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X	(2) Non-SCI		X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER		X	f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT		X	g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X	h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X	i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X	j. FOR OFFICIAL USE ONLY INFORMATION		X	l. OTHER (Specify)			k. OTHER (Specify)					
10. THIS CONTRACT WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO																																																																																				
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X																																																																																				
b. RESTRICTED DATA	X		b. RECEIVE CLASSIFIED DOCUMENTS ONLY	X																																																																																					
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL		X																																																																																				
d. FORMERLY RESTRICTED DATA	X		d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		X																																																																																				
e. INTELLIGENCE INFORMATION:			e. PERFORM SERVICES ONLY		X																																																																																				
(1) Sensitive Compartmented Information (SCI)		X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X																																																																																				
(2) Non-SCI		X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER		X																																																																																				
f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT		X																																																																																				
g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X																																																																																				
h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X																																																																																				
i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X																																																																																				
j. FOR OFFICIAL USE ONLY INFORMATION		X	l. OTHER (Specify)																																																																																						
k. OTHER (Specify)																																																																																									

12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release.

☐ Direct ☒ Through (Specify):

Commanding Officer, Naval Research Laboratory, Washington, DC 20375-5320, Code 6801.

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
* In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract, the successful contractor will be required to have a SECRET facility clearance, SECRET storage capabilities, and personnel available with DoD granted personnel security clearances commensurate with level of access required for performance of contract.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. (If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)

☐ Yes ☒ No

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. (If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)

☐ Yes ☒ No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL

TINA SMALLWOOD

b. TITLE

Contracting Officer, Security

c. TELEPHONE (Include Area Code)

(202)767-2240/2521

d. ADDRESS (Include Zip Code)

Naval Research Laboratory
4555 Overlook Ave., SW
Washington, DC 20375-5320

e. SIGNATURE



17. REQUIRED DISTRIBUTION

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | a. CONTRACTOR |
| <input type="checkbox"/> | b. SUBCONTRACTOR |
| <input checked="" type="checkbox"/> | c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR |
| <input type="checkbox"/> | d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION |
| <input type="checkbox"/> | e. ADMINISTRATIVE CONTRACTING OFFICER |
| <input checked="" type="checkbox"/> | f. OTHERS AS NECESSARY 1221.11, 6801, 6802 |

Personnel Qualifications

Proposals will be evaluated to determine if proposed personnel meet the experiences stated below. The proposed employee's background, pertinent experience, and the length of time each will be working on the project will be considered. Other considerations include the education level, experience (both general and project related) and the availability of sufficient key project professional and technical contractor personnel. The minimum qualifications for the desired personnel mix is as stated below:

***Processing Technician**

High School diploma or equivalent. At least ten years practical experience in semiconductor photolithography techniques including experience with optical aligners, thermal and e-beam deposition, plasma and wet etching. Experience in the troubleshooting and repair of equipment to perform these operations is also required.

MBE Technician

High School diploma or equivalent. At least ten years practical experience in growth of III-V materials via Molecular Beam Epitaxy (MBE). Experience in trouble shooting and repair of MBE machines is also required.

Ion Implantation Technician

High School diploma or equivalent. At least ten years practical experience in ion-implantation of semiconductor materials. Experience in trouble shooting and repair of ion-implantation machines is also required.

***Senior Engineering Technician**

B.S. in Physics, Chemistry or EE, or a non degree technician with appropriate technical training.

Electronics Technician

High School diploma or equivalent. A knowledge of semiconductor assembly techniques is required with at least 5 years of practical experience. This knowledge and experience must include saw and scribe, die attaching and various wire bond techniques. A knowledge of high temperature semiconductor processing is required, including oxidation and diffusion techniques.

Photo Technician

High School diploma or equivalent. At least 5 years practical experience in standard photolithographic techniques. This must include experience with optical aligners, plasma and wet etching, and wafer inspection.

Laboratory Technician

High School diploma or equivalent. At least 5 years practical experience in the construction and repair of laboratory quartz and glassware.

Vacuum Systems Technician

H.S. Diploma and 10 years experience designing and constructing accelerator vacuum systems, integrated circuit test hardware, maintaining laboratory equipment and facilities and troubleshooting computer hardware in test systems.

***Electrical Engineer-Electrical Circuit Design**

B.S. in Electrical Engineering or Physics. At least ten years experience in electrical design with familiarity with both digital and analog circuits. Demonstrated knowledge and experience with the application of contemporary computer aided design tools to circuit design. Demonstrated experience in testing analog and digital circuits.

Electrical Engineer – Analog Circuit Design and Test

B.S. in Electrical Engineering or Physics. At least five years experience in electrical design, with familiarity with analog devices, analog circuit design and analog circuit testing. Demonstrated experience and knowledge of the application of contemporary computer-aided design tools to circuit design. Demonstrated experience in testing analog circuits.

Reliability Engineer

B. S. in Electrical Engineering or Physics. At least five years of experience in design, assembly and maintenance of reliability testing apparatus. Experience in collecting and reducing reliability data. Familiarity with failure analysis tools such as scanning electron microscope, infrared images, atomic force microscopy and X-ray analysis.

Microwave Modeling and Simulation Engineer

Ph.D in Physics or Electrical Engineering with ten or more years experience in the development and application of physics based computer codes for microwave devices. Familiarity with commercial microwave device modeling tools.

Electrical Engineer – Test Systems

B.S/B.E.E and 3 years experience developing test systems for integrated circuits, radiation effects measurements and effects and test software and hardware development for single event effects measurement in both a pulsed laser and energetic ion environment.

***Research Scientist-Electron Beam Lithography**

Ph.D in physics, chemistry or engineering. At least 5 years experience in electron beam lithography is required. Specific knowledge of the JEOL 5DII Nanowriter is required. Knowledge of the techniques and requirements for the X-ray masks is required. The Research Scientist will supervise and coordinate the work of the other contract employees.

***Research Scientist – Wafer Bonding**

Ph.D in physics, chemistry, materials, or engineering. At least 2 years experience in semiconductor material growth, processing, surface physics, or wafer bonding. Familiarity with semiconductor material evaluation techniques.

***Researcher- Pulsed Laser Simulation**

Ph.D in Physics and 10 years experience or 15 years experience in area of pulsed laser simulation of single event effects, radiation effects mechanisms in semiconductors, measurements of radiation effects in advanced integrated circuits, and integrated circuit modeling using computer codes.

Researcher – Radiation Effects Measurements – Superconductor Devices

Ph.D in Physics and 5 years of experience or B.S. with 10 years of experience making radiation effects measurements on high temperature superconductor devices and materials and modeling the results.

Researcher – Radiation Effects Measurements – Solar Cell Materials

Ph.D in Physics and 5 years of experience or BS with 10 years of experience making radiation effects measurement on solar cells and solar cell materials and modeling the results.

Researcher – Ultrafast Laser Spectroscopy

Ph.D in Physics or Chemistry with experience in ultrafast laser spectroscopy, nonlinear optics, excited-state molecular photophysics and the use of tailored optical pulses to gain enhanced control of photophysical and photochemical events.

Researcher– Radiation Damage

B.S./B.E.E. and 10 years experience in the field of radiation damage including effects in solar cells, modeling the effects of the natural space radiation environment and the models of the space environment.

Researcher – Radiation Effects Measurements – Computer Codes

Ph.D in Physics and 10 years experience or B.S. in Physics and 15 years experience in radiation effects measurements including ion beam effects, single Event effects, radiation damage, and simulation of transient effects using computer codes.

Researcher – Radiation Effects Measurements - Modeling

Ph.D in Physics or Engineering and 10 years experience or B.S. and 15 years experience in radiation effects measurements and modeling, especially with photonics systems and devices.

*These individuals shall be considered key personnel for the purposes of Clause H-2, Key Personnel.